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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/509,232	11/06/2000	Wolfgang Buerger	GT/83	9676

7590 03/20/2007  
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EXAMINER
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LEWIS, BEN

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

09/509,232

Applicant(s)

BUERGER ET AL.

Examiner

Ben Lewis

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11/2/07
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **Detailed Action**

1. The Applicant's amendment filed on January 2<sup>nd</sup>, 2007 was received. Claim 31 was amended. Claims 1-30 and 32-34 were cancelled.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action (issued on August 17<sup>th</sup>, 2006).

### **Claim Rejections - 35 USC § 103**

3. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (EP 0 718903) in view of Branca et al. (U.S. Patent No. 5,814,405).

With respect to claim 31, Kato et al teaches an electrochemical energy storage device comprising at least two electrodes, an electrolyte, and a porous carrier material (expanded PTFE) for the electrolyte having an inner pore structure in which a perfluorinated surface-active substance is present disposed between the electrodes. (Col. 1, lines 3-5; Col 3, lines 11-25, 35-38; Col. 4, lines 33-47; Col 6, lines 36-47 [note ion exchange/electrolyte resin is the perfluorocarbon-based ion exchange resin filled in pores]). However, Kato fails to disclose a carrier material inner pore structure consisting essentially of a series of highly elongated nodes with an aspect ratio of 25:1 or greater that are generally aligned in parallel that are interconnected by fibrils. Branca

Art Unit: 1745

teaches an expanded PTFE (ePTFE) useful in electronic products and as support layers in composite constructions that is much less sensitive to changes in temperature and more uniform than prior art ePTFE. This ePTFE has an internal microstructure consisting essentially of a series of nodes interconnected by fibrils, said nodes generally aligned in parallel, being highly elongated and having an aspect ratio of 25:1 or greater.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the ePTFE as taught by Branca et al. as the carrier material in the electrochemical storage device as taught by Kato et al. because it has a uniform microstructure, is useful in electronic products, and is less sensitive to changes in temperature that may occur in an electrochemical energy storage device.

With regard to a second perfluorinated surface-active substance different from said first electrolyte being present, Branca et al. teach that in another embodiment, one paste extruded tape or membrane can be layered, with another paste extruded tape or membrane to produce an asymmetric composite form of the invention in which the node-fibril microstructure is different on one side as opposed to the other. Lamination is achieved by preparing an extrudate of each membrane and rolling down as described further above; and then combining the two membranes into layers, followed by calendering, drying, and the stretching, sintering, and stretching again, all as described further above (Col 3 lines 60-67).

### **Double Patenting**

5. Claim 31 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 15 of U.S. Patent No. 6,613,203 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because both instant claim 31 and conflicting claim 15 patent essentially describe a membrane electrode assembly formed of expanded polytetrafluoroethylene (ePTFE) with a structure including nodes aligned in parallel and interconnected with fibrils, such that the nodes have an aspect ratio of 25:1 or greater. In both the prior art and the instant invention, the nodes are filled with a material permeable to ions. Although the patent claim 15 and instant claim 31 do not use identical language, one of ordinary skill in the art would understand that: "expanded PTFE" recited in the .203 patent is the "carrier material for the electrolyte" recited in instant claim 31, and "electrolytes" and "perfluorinated surface active substances" recited in instant claim 31 encompass the "ion exchange material" required by claim 1 of the .203 patent, which could function as the electrolyte. Additionally, the perfluorinated surface-active agent of the instant invention is capable of ion exchange and can function as an electrolyte.

### ***Response to Arguments***

6. Applicant's arguments filed on January 2<sup>nd</sup>, 2007 have been fully considered but they are not persuasive.

Art Unit: 1745

*Applicant's principal arguments are*

(a) In the present invention the porous material of the carrier remains porous, despite the presence of the perfluorinated surface-active substances. The substances only coat the surface of the pores and do not fill up the pores to render the material non-porous, as is the case in Kato.

(b) The obviousness-type double patenting rejection is traversed. Claim 15 of US Patent 6,613,203 (Hobson) is based on claim 1, which states inter alia that the ion exchange material substantially impregnates the membrane so as to render an interior volume of the membrane substantially occlusive. In column 3, lines 45 - 50 explain the term "substantially occlusive" to mean that the interior volume is filled with ion exchange material to such an extent that 90% or more of the interior volume of the membrane is filled. Therefore, the membrane disclosed here is no longer porous and hence no longer free to take up a separate electrolyte.

In response to Applicant's arguments, please consider the following comments.

(a) Kato et al teaches an electrochemical energy storage device comprising at least two electrodes, an electrolyte, and a porous carrier material (expanded PTFE) for the electrolyte having an inner pore structure in which a perfluorinated surface-active substance is present disposed between the electrodes. (Col. 1, lines 3-5; Col 3, lines

Art Unit: 1745

11-25, 35-38; Col. 4, lines 33-47; Col 6, lines 36-47 [note ion exchange/electrolyte resin is the perfluorocarbon-based ion exchange resin filled in pores]). "Resin filled pores of Kato et al. encompasses an inner pore surface that is at least partially coated with a layer of perfluorinated surface active substance."

(b) "A membrane containing ion exchange material which substantially occludes the pores of the membrane encompasses an inner pore surface that is at least partially coated with a layer of perfluorinated surface active substance."

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1745

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

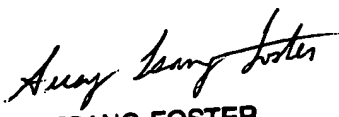
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben Lewis whose telephone number is 571-272-6481. The examiner can normally be reached on 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ben Lewis

Patent Examiner  
Art Unit 1745

  
SUSY TSANG-FOSTER  
PRIMARY EXAMINER